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To: R.P. Heretick Date: October 28, 1992

From: S. Tafur

Subject: **Paper Development Weekly Summary**

Wood Pulp Paper

Samples of wood pulp and flax papers are being analyzed for levels of sulfur, chlorine, and nitrogen. Control samples were run by Analytical Research to select an ion chromatography column suitable for S and Cl analyses; analyses of the test samples are in progress. The results for nitrogen analyses show a higher level of N in the flax paper than in any of the three wood pulp papers (a hardwood, a softwood, and a hardwood/softwood blend).

Sentence Rewrite

Reduced Sidestream

Sidestream visibility analyses were completed on a series of cigarettes made with U. Maine papers produced with different types of calcium carbonate and several KC Multifex MM calcium carbonate papers. Visibility reductions for papers with combination sizings of potassium citrate or succinate and MKP are about 50%. Substantial differences in 8-port static burn times are noted among the various calcium carbonates to offer a potential option for increased puff count. Subjective evaluation of comparable Multifex MM calcium carbonate papers made at the U. Maine or by Kimberly-Clark showed no preference for either paper with monopotassium phosphate as the additive. Higher reduction (55%) was achieved with a Multifex MM chalk paper of lower permeability (4 Coresta before sizing).

Handsheets prepared with two different types of fibrous calcium sulfate (U.S. Gypsum grades A-30 and H-45), each at 5 Coresta and sized with monopotassium phosphate, were submitted for preparation of handmade cigarettes. These handmade cigarettes will be used to evaluate sidestream visibility and ash characteristics.

Banded Papers

Analyses of propyl paraben as an indicator for Avicel were completed on samples of Grade 137-1 cigarette paper printed with three levels of Avicel in 6.5mm bands at target levels of 6.2%, 4.7%, and 3.0%. Each bobbin was sampled at the outside of the bobbin and at 50, 400, 800, 1200, 1600, and 2100 meters to determine variation of application level within bobbins. Avicel levels at the outside of the bobbins measured 6.3%, 4.1%, and 3.0%, respectively. Samples from the bobbin with a 6.2% target in the bands averaged 5.4% with the 50-meter sample being low (3.5%) and the next three being somewhat low at about 5.3%. Samples from the 4.7% target bobbin were very consistent, averaging 4.4%, as were the variability samples from the bobbin with a 3.0% target (averaging 2.8%). Larger sheets have also been received for testing of variability in the bands across the web. Within-band permeability measurements are also in progress.

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I Sample
II Sheets of banded papers were provided by Kimberly-Clark which showed significant improvement over previous papers in terms of wrinkling. The printed papers were moistened and redried to remove the wrinkles. There was no distortion or spreading of the bands.

Cast Leaf

The potential of the steam-explosion gun at Virginia Tech to be used for the processing of tobacco materials was discussed with members of the Cast Leaf project. Work conducted previously at PM suggested that steam-explosion might be capable of releasing natural tobacco binder in a cost effective manner. It appears that the facility at Virginia Tech may be more appropriate and less costly for conducting a large scale cast leaf study than a pilot plant that had been tentatively scheduled at the Herty Corporation.

Propyl paraben tracer analyses will be obtained for both banded and unbanded regions. Within-band permeability measurements are also in progress.

Tipping Papers

A meeting was held with representatives of Purchasing, Hermetite, and Thiele-Engdahl, our cork ink supplier, to finalize ink weight specifications for cork-on-white tippings printed with low silicate inks. The initial cork ink weight target had been set at 3.6 g/m² in the cork zone for the low silicate inks, substantially lower than the 5.1 g/m² target for some of our tippings with the previous inks. Based on several months of successful operating performance, the cork ink weight specification has been adjusted downward to 3.4 g/m² for the low silicate inks.

Thiele-Engdahl discussed a new ink formula which is intended to address several PM concerns about the ink plasticizer, surface friction, and pigment cost. Purchasing Technical Services has submitted the proposed ink formulation to Materials Evaluation for review.

Support Activities

The automatic rod weight classifier recently transfered to Cigarette Technology was compared to an identical unit in CTSD. Two sets of cigarettes with very different weights were each run on our instrument and on the one in CTSD, and then again on our instrument. For both cigarette sets, the statistics agreed very well among all three data sets. The unit in CTSD has previously been used for selections of all the specification study cigarettes.

A 1% solution of CR-2978 in ethanol was applied to nonporous paper of conventional weight for Cigarette Development. The coating work was done on the old pipe coater pending analytical results from coating uniformity trials on the Fox Valley coater.

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